THE ATLANTIC AUTOMATION DOCUMENT STORAGE AND RETRIEVAL SYSTEM

SETUP GUIDE

CONTENTS

Chapter 1 What is the DSR?

DSR stands for Document Storage and Retrieval, a Document Management System (DMS). It is capable of scanning "paper" pages and converting them to Adobe PDF[tm] (Portable Document Format) documents. Those documents are then stored, on a row-by-row basis in the "Document" table of a Microsoft SQL Server[tm] database. The original PDF file is then deleted. The document is stored <u>only</u> in the SQL Server[tm]. Using highly efficient extensions to SQL Server[tm] the DSR system is capable of storing and retrieving documents much faster than competing systems that hold documents as a long file –system directory of documents. Using the DSR System it is also possible to store other documents (i.e. Microsoft Word "doc" files). These are held in genuine "native" format, and can be retrieved in the same manner as PDF files.

Users of the DSR system are enabled to search for documents on the basis of the document Title, Keywords Or Headnotes. They can also search by date, and even using the document text (providing it has been converted using the optional Optical Character Recognition module).

Users only "see" documents they are authorised to "see", and cannot access any document "out of group". When a user requests to view a document an addition to the SQL Server[tm] publishes the document (as a unique publication) on the company Intranet (or Internet if desired) to be viewed by that user only. When the user has completed their study of the document it is removed from publication.

At any one time documents can be viewed by any number of users, each user having their own virtual copy of the document. Any number of users can view the same document.

Since documents are only stored within the SQL Server[tm] there is no directory of documents to maintain, and security is maintained by the DSR system using row-level permissions. That is an addition not supported by SQL Server[tm] "out of the box" but added in by the DSR system.

It is possible to add-on text conversion (Optical Character Recognition), to the system, and the DSR system can even interwork with most "off the shelf" OCR packages.

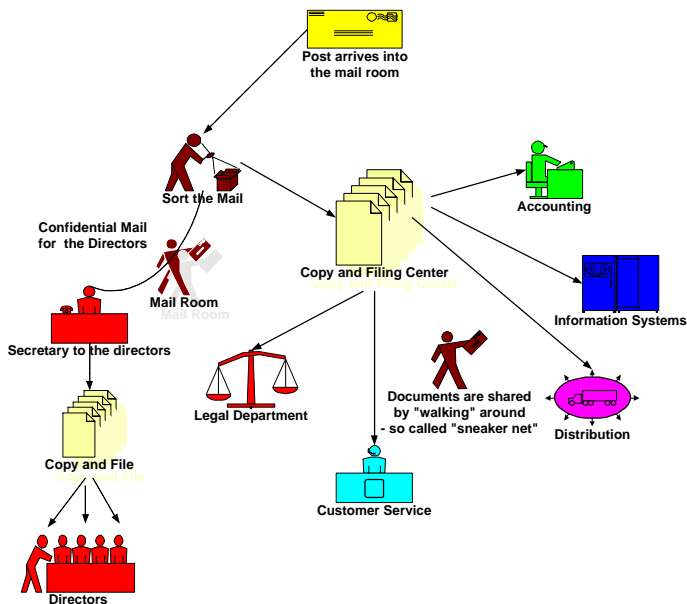The Atlantic Automation DSR system works with virtually all scanners and (of course) supports automatic document feeders. Scanned pages can be rotated and "cleaned up" of blemishes and stains for storage. Those functions are built-in to the DSR Manager (the document storage part of the system) and are highly efficient. So efficient, that DSR Manager will work effectively on a 166 MHz Pentium[tm] II

processor running with only 32MB of Ram under Windows NT 4.0, although it does work better on more modern machines!

Chapter 2 The Path for a Document

In this chapter we are going to consider what happens to a document when it comes into the company.

Traditional System

In the traditional system a document enters the company and is either filed, or copied for distribution. This means a great deal of paper! It also means many staff "walking around" at any one time. Those are staff that are not *working but walking*. That is inefficient. Worse, documents get copied and confidential documents can "leak".
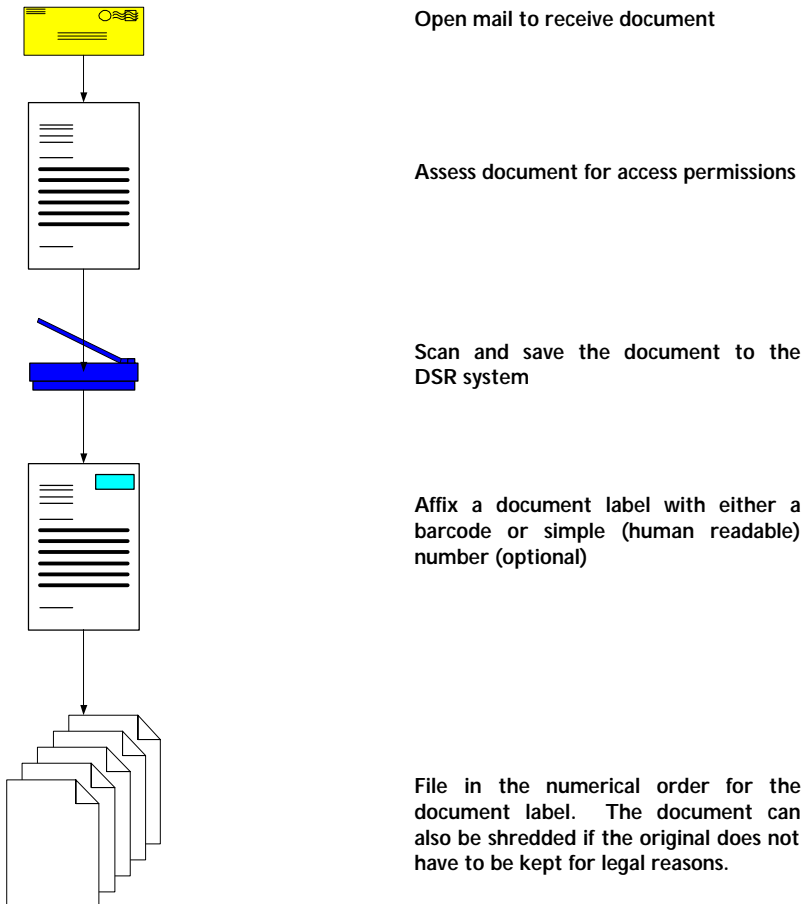
DSR Based

In the DSR-based system it is still necessary to sort documents into those to be scanned by the confidential secretary, and those to be scanned by the "public" scanners. There however the similarity ends. Once the document is in the DSR system the access permissions for all documents are set to those "who need to know". Access by anyone else is simply not possible. That means that users can view their own documents *from any terminal in the company*, without any risk of their documents being accessed by anyone else. The same applies to all other groups within the DSR.

It can readily be appreciated that this is a very different means of working. But, what happens to the original document? That could be needed for legal ownership, or other purpose; obviously it must be filed somehow. The answer is yes, but in what is essentially one big "file draw". We suggest that each document is scanned, and then a numbered label stuck to it. When you *need* to find an *original* document, use the DSR to identify the document and give you the number. Then, simply go through the numerical file of documents until the number is reached. *That will be the original*. We estimate (based on our own company) that filing times are reduced by 97%, and original document lookup by 60%. "Normal" (i.e. the original is not needed) document lookup times are reduced by around 82%.

Suggested Workflow for a Document

When a document enters the company we have found that the following workflow is highly efficient, and we therefore commend it to you. It is not the only method of working, but it does save a great deal of time.

Open mail to receive document

Assess document for access permissions

Scan and save the document to the DSR system

Affix a document label with either a barcode or simple (human readable) number (optional)

File in the numerical order for the document label. The document can also be shredded if the original does not have to be kept for legal reasons.

Chapter 3 Who Does What when Installing?

It is most important to understand how we planned the DSR system. Now, that does not mean that this is the only way it will work. Provided that the system implements all of the required components then it will work. More importantly, the DSR system will work for any company of any size, from the smallest micro-company right up to a massive multi-national. Having said that, we obviously designed the set-up process with a particular company structure in mind. What we planned was:

DSR Database

Created and maintained by one of the company database administrators (DBAs). The administrator would install the database on one of the company SQL Servers and would be responsible for managing accounts and groups within the database (they are, after all, database functions). For that reason the DBA should also have the DSR Accounts Manager installed on their workstation.

DSR Intranet

This is just about completely self-maintaining and should not require any day-to-day maintenance. Normally, the DSR Intranet would be installed by either the network administrator or the Intranet administrator.

DSR Documents

One of the DSR groups is called "DSR Admins". This group cannot be removed using the DSR Account Manager and is the main administrative group for DSR documents. When the details of a document need changing (Title, Keywords, Headnotes or group access) then it is members of this group who can make the change using the enhanced DSR administrators view into the Document Intranet.

Normal view for a user   Extra page/view for a "DSR Admin"

There should be a group of people (there must be at least one!) designated to be DSR administrators, and it is these people that are responsible for document administration within the system. This group could (of course) include the database administrators, but should really be "workflow managers".

When we designed the system therefore, we planned for the following installation:

Component	Installed by	On these machines
DSR Database	Database administrator	Company SQL Server
DSR Account Manager	Database administrator	Administrator's workstation.
DSR Intranet	Network administrator	Company Intranet Server
DSR Network Client Installer	Network administrator	Any public network share.
DSR Intranet URL	Anyone	User workstations.
DSR Scanner and DSR Manager	Network administrator	Scanner server or workstation.

This is definitely *not the only way to do it!* All the parts can easily be managed by one person. Having said that, <u>the method above will work always, even for a very large company</u>. *What is important is the order of installation*.

The database must go in first, and (before use) the DSR Account Manager. That is needed to create the users and groups for the DSR system. Next, the Intranet files are installed on an Internet Information Server (IIS). That is the main access point for the DSR system. The client "net setup" is next. That installs the "setup.exe" for preparing the user's own workstations for use with the DSR system. Finally the scanners (and their DSR Manager scanning applications) are installed. At that stage the installation is "ready to go". All in all, the complete installation should take no more than 30 minutes to complete (walking time between servers not included!). We suggest the following order (assuming one person is going to do the installing), to minimise moving between servers:

i)   **Go to the server room**
ii)   **Install and build the database**
iii)   **Install the Intranet site**
iv)   **Install the "net-setup" (Client Network Install)**
v)   **Return to your own desk**
vi)   **Install the DSR Accounts Manager**
vii   **Locate the "net-setup". If you installed this on a server called "MyServer1", and your company domain is called "OurDomain" then you will find this under:**
My Network Places->Microsoft Windows NetworkOurDomain->Myserver->DSR_CLIENT
vii)   **Using the "net-setup", install the DSR Client on your own workstation.**

Chapter 4 Checklist Before Installing

You will need to ensure that you have all of the following in place before installing:

1. Windows NT 4.0 with SP6 as a *minimum operating system* on all servers. We recommend Windows 2000 Server or Windows Server 2003. Both are supported, and performance is better.
2. Machines connected by a network (LAN, WAN or WiFi).
3. At least one server running Microsoft SQL Server 7 (SP2) or SQL Server 2000 or higher. This server must also be running Internet Information services *and* support http: requests via port 80. This is for document publication.
4. A server running Microsoft Internet Information services or the Apache server. <u>Active Server Pages (ASP) must be supported</u>. The server must be accessible to the company Intranet, and provides the client interface into the DSR. We suggest Windows 2000 Server or Windows Server 2003.
5. At least one scanner of reasonable quality, attached to a workstation. The scanning workstation(s) must be at least a Pentium^{tm} II machine running at 166MHz of better, with 32MB of RAM.
6. Workstations (any machine of Pentium II or better) to run the administrative application. The workstations must be able to "see" the "publishing" (c.f. 4 above) server.

Check that you have suitable rights for installing software onto the servers. To install the database you will need to be a SQL Server administrator (i.e. "sa")

Chapter 5 Understanding DSR Accounts and Groups

The Atlantic Automation Document Storage and Retrieval (DSR) system works on Microsoft SQL Server[tm], and relies on the excellent security of SQL Server for its own security.

SQL Server supports two type of login account, those coming from a Windows domain and "SQL Server" logins, i.e. those that are *de novo* to SQL Server. Since a user might have no "rights" on the Windows network but be the DSR Administrator, it is important that both types of security are supported.

Each user of the DSR System has their own login, either a "pass through" from Windows or a separate DSR login. That makes for better security. Each DSR users login is permitted to "use" the DSR database, as originally set-up. They are also joined into the "public" group, meaning that all users can view public documents like the DSR user manual.

Accounts *can* be set up using the system stored procedures, from with SQL Server Query Manager, or by means of SQL Enterprise manager. The DSR Accounts Manager tool is however far more convenient as it "looks" only at the DSR system and will make all of the appropriate changes, depending on what you want to do.

It is important to remember that a user account is only the access point for that user into the DSR system. The account provides a means of tracking the user within the system and enforcing security. It does not provide permission to view documents. That is managed by means of groups.

Microsoft SQL Server is able to group users into what are termed "roles". These are groups of users who have similar requirements in terms of access permissions. For the DSR system is was not possible to implement access permissions by means of groups since earlier versions of SQL Server[tm] (version 7 and 2000), that are supported by the DSR system, do not permit "row level permissions". That is to say it is not possible to grant permission to access documents on a document-by-document basis. To solve this, some additions have been made to SQL Server, supporting row level selection. We therefore term our administrative objects "Groups". Each group is supported by means of standard SQL Server[tm] "role", but has the advantage of supporting row-level permissions (i.e. each document can be assigned to a group, and only members of that group can view the document.

There is one other important point. Using a "Windows" login can cause problems. Windows only permits "one hop" for integrated logins. That means that if the *Workstation -> Intranet Server -> SQL Server* line is more than "one hop" away the login *will* fail. That is built into Windows, and cannot be changed. That is another reason we provide "Stand alone" (i.e. DSR) logins. They always work!

Chapter 6 Backing up the DSR Database

<u>It is most important that the DSR database is backed up fully, and frequently</u>.

<u>We Do Not Do This For You !</u>

The database holds all the documents on the DSR system. There are no files held in the Windows file system. Backup is therefore a simple matter of ensuring that the database is fully protected.

We recommend (but this is only a recommendation) that the following are undertaken:

1. A full backup of the database is undertaken each night, after close of business.
2. A complete DBCC (consistency of the database) check on the database either before, or following the backup, and any "repairs" are completed.
3. Backups of the transaction log are taken through the day (1-2 hour intervals) to ensure that no large body of work is lost should the DSR server "go down".
4. All backups should exist both on hard disk (for speed) and off-site tape (for safety).
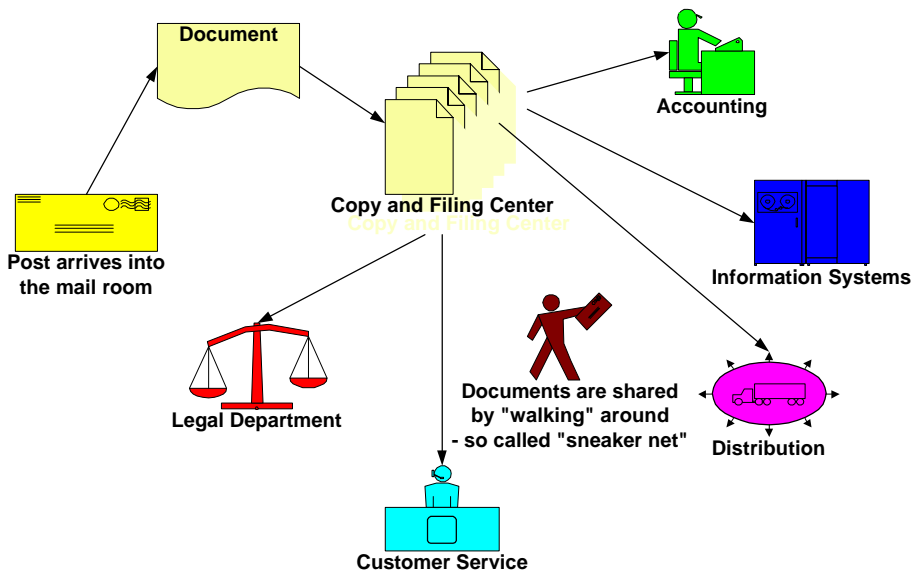
Please ensure that the appropriate database administrator is aware of the new database, and has put proper steps in place to ensure backup.

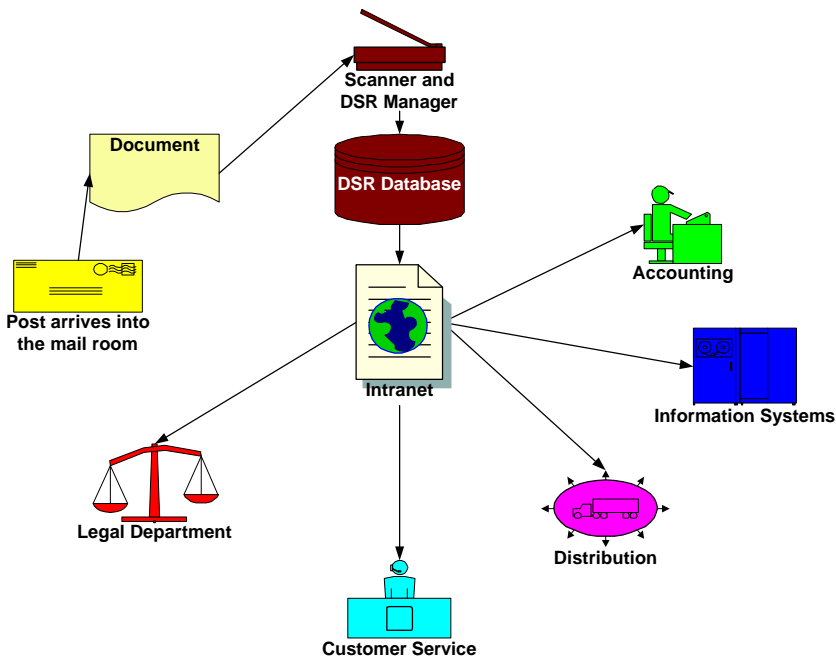**Remember to test the restore operation before valuable documents are stored!**

Chapter 7 Planning the DSR Installation

It is very important to plan the structure of the DSR system, before you get too many documents inside it! For that reason we suggest a quick look at how documents are handled.

In a conventional company the following might be a typical path-of-flow for a new document:

Document

Post arrives into the mail room

Copy and Filing Center

Accounting

Information Systems

Legal Department

Documents are shared by "walking" around - so called "sneaker net"

Distribution

Customer Service

Now consider the same document with the Atlantic Automation DSR system in place:

To share the document between the different groups of users, all that is needed is to assign the document to the correct group, then ensure that the users *who need access to the document* are members of that group.

Example:
A small distribution company has licenses for three scanners and receives the following documents (this is a simple model):

Document	Needed by
Bank and accounts related documents	Directors only
Credit applications	Credit control and accounts
Tax related documents	Directors and Senior accounts staff
Health and Safety related documents	Directors and Safety officer.
Public Health and Safety documents	Everyone
General letters and administrative documents.	Admin staff
New product information	Sales force.
Goods received notes	Credit control, accounts and warehouse.
Goods out notes	Credit control, accounts and warehouse.

We would recommend that the following groups are present

Group	With the following members	Documents
public	System group. Everyone is a member	Public Health and Safety documents
DSR Admins	Document administrators for the DSR system	DSR System documents only
Directors	Company directors	Bank and accounts related documents
Health and Safety	Safety officer Directors	Health and Safety related documents
Credit control	Credit control staff Accounts staff	Credit applications
Tax and Official	Directors Company accountant (via Extranet) Senior accounts staff	Tax related documents
Administration	Admin Staff Directors Senior Accounts staff	General letters and administrative documents
Sales	Sales force Credit control staff Accounts staff Directors	New product information
Warehouse	Warehouse Credit control staff Accounts staff Directors	Goods received notes Goods out notes

All of this is just a few clicks of the mouse away. What is more, groups can be changed ad lib, as required when the business grows or changes direction.

We suggest that before you start to input documents you undertake the following steps:

1. Put a backup plan in place for the database.
2. Decide on the basic Groups for your structure
3. Create the DSR users
4. Move the users into their respective group.

Chapter 8 Using the DSR Accounts Manager

Login

This screen provides access to the DSR Accounts Manager.

The server field will be filled-in automatically, and is the name of the DSR database server last installed. The same is true of the name of the database.

To login, supply the name and password of a full administrator for the database server (details not stored for obvious reasons). The login details must be those of a full administrator (i.e. "sa") because the user requires the "rights" to manage server logins. A login from the "DSR Admins" groups is normally sufficient for this task.

Once you have successfully logged into the DSR system, the screen will change to:

Passwords and the user ID are destroyed within the application as a security measure.

Creating a New User (DSR Security)

To create a new account, select New ✍ Create New DSR User from the menu bar, or select the **icon from the tool bar. The following window will then open.**

The user name should follow standard SQL Server[tm] naming conventions, and should (in general) be an easily memorised name. We suggest that for a user called Margot Smith a login of Margot.Smith would be suitable.

The password must be entered twice, and the passwords must match for the new login to be accepted. If not, then

Will be displayed.

If the name and password were accepted then the dialog will dismiss itself on completion.

Remember, new users are not placed in any group and must therefore be assigned.

Permitting Windows Users into the DSR

Any user of the Windows network can be "passed through" into the DSR System. This is by means of the so-called "integrated security" model of SQL Server. Remember though, if there is more than "one hop" over the network, Windows will not allow the login. That is an important point to remember, and since it is a feature of the Windows network model, it cannot be changed.

To use the integrated login feature, select:
        New->Permit and Existing Login to the DSR System
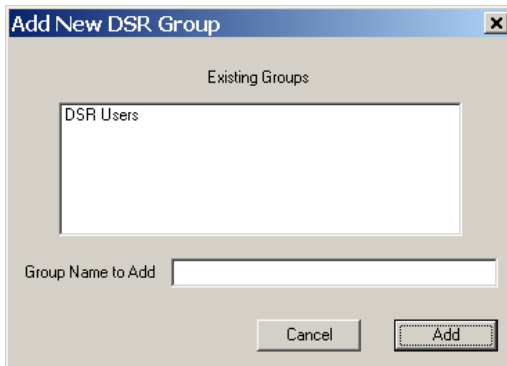
This window is displayed:

The pane on the right-hand side shows the users available from the selected domain. The pane on the left-hand side shows the users who have been selected into the DSR system. These users are not actually added in until the "Add Selected" button is pressed. They are then equivalent to users added to the DSR in the normal way.

It is very important to remember that Windows users may find their login prevented by Windows itself. When this happens a message, to the effect that the __ is unable to login. That means that there is more than "one hop" for that user, and an integrated Windows login is not possible. This is a feature of Microsoft Windows and the behaviour cannot be modified.

Creating a New Administrative Group

To create a new administrative group, select *Add a New DSR* Group from the New menu item, or select the [icon] icon from the toolbar.

On entry, the group list will contain only one entry, that for *DSR Users*. Two other groups are created by the installation program, *DSR Admins* (containing document administrators) and DSR Scanners (for the scanner hardware). Neither of these groups can be deleted using the Accounts Manager, and should not (normally) be touched using the SQL Server[tm] Enterprise Manager.
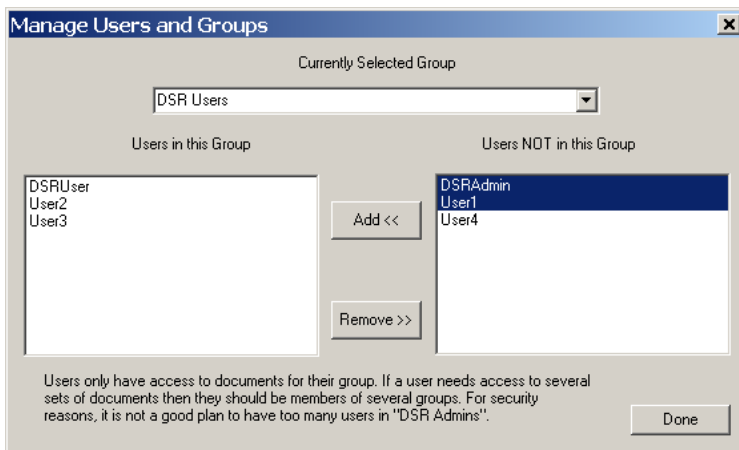

Enter the name of the new group in the field provided and then click on the "Add" button. Provided that the new group was allowed by SQL Server, then it will appear in the list of existing groups and the "group to add" field will clear.

Moving Users In and Out of Groups

Moving users into and out of groups is probably the major function for which the Accounts Manager will be used. To select this function, select *Manage* from the menu or the **icon from the toolbar.**

On opening the window the "Currently Selected Group" will be empty, and the "NOT in this Group" list-box will contain a list of all users currently in the database. To manage a particular group therefore, select the group from the pull-down. The list-boxes will then update as to who is (and is not) in this group.

Remember, new users are not placed in any group and must therefore be assigned. Also, users can belong to more than one group.

To add users to the selected group, select one or more of the users from the "Users NOT in this Group" list and press the "Add <<" button. The users will be added to the group and the lists will update.

To remove users from the selected group, select one or more of the users from the "Users in this Group" list and press the "Remove >>" button. The users will be removed from the group and the lists will update.

When you have completed the operations, press "Done" and the window will close.

Users can be moved back and forth as many times as needed. Thus if a decision is made that User1 needs access to accounts documents for today only, add User1 to the Accounts group at 9am, and remove him/her at 5pm. Simple!
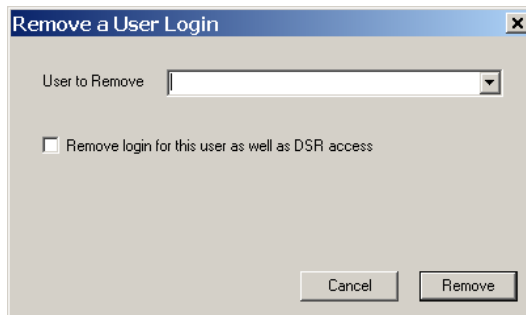
We advise against having too many users in the "DSR Admins" group. These are the users having the enhanced Internet view of documents and as such can re-assign documents between groups (but not groups themselves). Good security suggests that the number of people in this group should be small.

Removing a User

Removal of a user is accomplished by selecting *Delete ✍ Remove User* from the menu, or by selecting the icon from the toolbar.
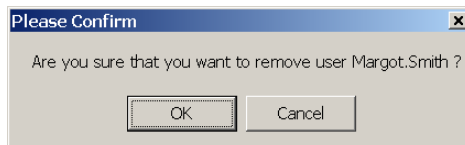
The removal of an account from the DSR system is actually a two-stage process, but one that is managed in a single process by the DSR Account Manager.

First, the user's right to "use" the DSR database is revoked. Next, and only if the "Remove login" checkbox is ticked, the SQL Server^{tm} login is deleted for that user.

To remove a use, first use the combo-box to select the user to be removed.
Next decide if this user is to be completely deleted. After all, it may be that the user has rights in another (non-DSR) database on this SQL Server^{tm}. If in doubt, consult with one of the other database administrators. If you do want to remove the user then tick the checkbox.

Press the "Remove" button. To confirm, the following dialog will appear.

If you press "Cancel" then the message will disappear and the selection will be cleared. The user will not however be removed. If you click "OK" then the user will

be removed from the database, and (if the checkbox was ticked) their SQL Server login will be also revoked.

If successfully removed, the dialog will close. Since DSR user "own" nothing, if a user was removed by error, they can easily be re-created. Nothing will be lost.

Removing an Administrative Group

Removing an administrative group is a simple process to manage, but can have widespread, and unintended effects! Remember, documents "belong" to groups. Hence if a group is removed then the documents would have *no owner*! To prevent that occurring, and documents becoming inaccessible to the users, all documents that remain "within the group to be deleted" are re-assigned to the "DSR Admins" group once the group is deleted.

Let us examine an example, using the DSR System.

On entry into this demonstration we see that the document is assigned to the "Accounts Receivable" group:

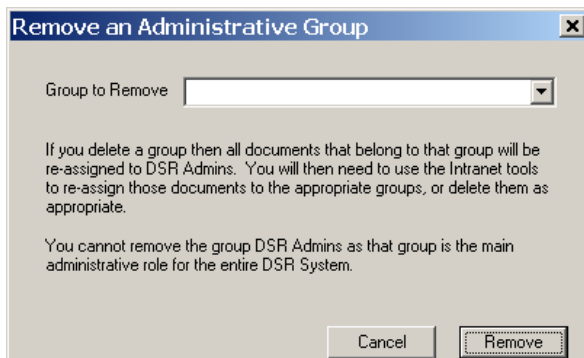|	
Accession No	19
Document Type	Accounts Document ▼
Document Label No	
External Reference No	
External Reference Type	Invoice ▼
Title	Remittance Advice from Alexander Mann - Good quality greyish-cream paper.
Key Words	DEMO
Headnotes	Remittance advice on good quality greyish cream paper.
Access Level	Accounts Receivable ▼
Status Code	New Document ▼
Upload or replace the PDF file	

Now we use the Accounts Manager to remove the Accounts Receivable group. When re-examined it can be seen that the document has been re-assigned to the "DSR Admins" group.

Accession No	19
Document Type	Accounts Document
Document Label No	
External Reference No	
External Reference Type	Invoice
Title	Remittance Advice from Alexander Mann - Good quality greyish-cream paper.
Key Words	DEMO
Headnotes	Remittance advice on good quality greyish cream paper.
Access Level	DSR Admins
Status Code	New Document
Upload or replace the PDF file	

That means that until re-assigned the document can be viewed by DSR Administrators only. An admin will therefore have to re-assign the document to one of the other groups, thus:
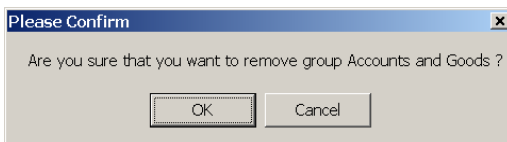
Accession No	19
Document Type	Accounts Document
Document Label No	
External Reference No	
External Reference Type	Invoice
Title	Remittance Advice from Alexander Mann - Good quality greyish-cream paper.
Key Words	DEMO
Headnotes	Remittance advice on good quality greyish cream paper.
Access Level	Accounts Payable
Status Code	New Document
Upload or replace the PDF file	

To remove a group, select *Delete⌇ Remove Group* from the menu, or select the ![icon]
icon from the toolbar. The following window will appear.

Select the group to be removed from the pull-down list. The DSR Admins and DSR
Scanners groups will not appear in the list, and cannot be removed using the DSR
Accounts Manager.   These groups should not be removed using SQL Server*tm*
Enterprise Manager.

To remove the selected group, click on the "Remove" button.   A message will
appear:

If you click "Cancel" the window will close and the group will not be deleted.
Clicking "OK" will result in the removal of the group. The window will then close.

**Remember! Whilst deleting a group will not delete documents, they will be made
inaccessible to the users until re-assigned by a member of the DSR Admins group**.